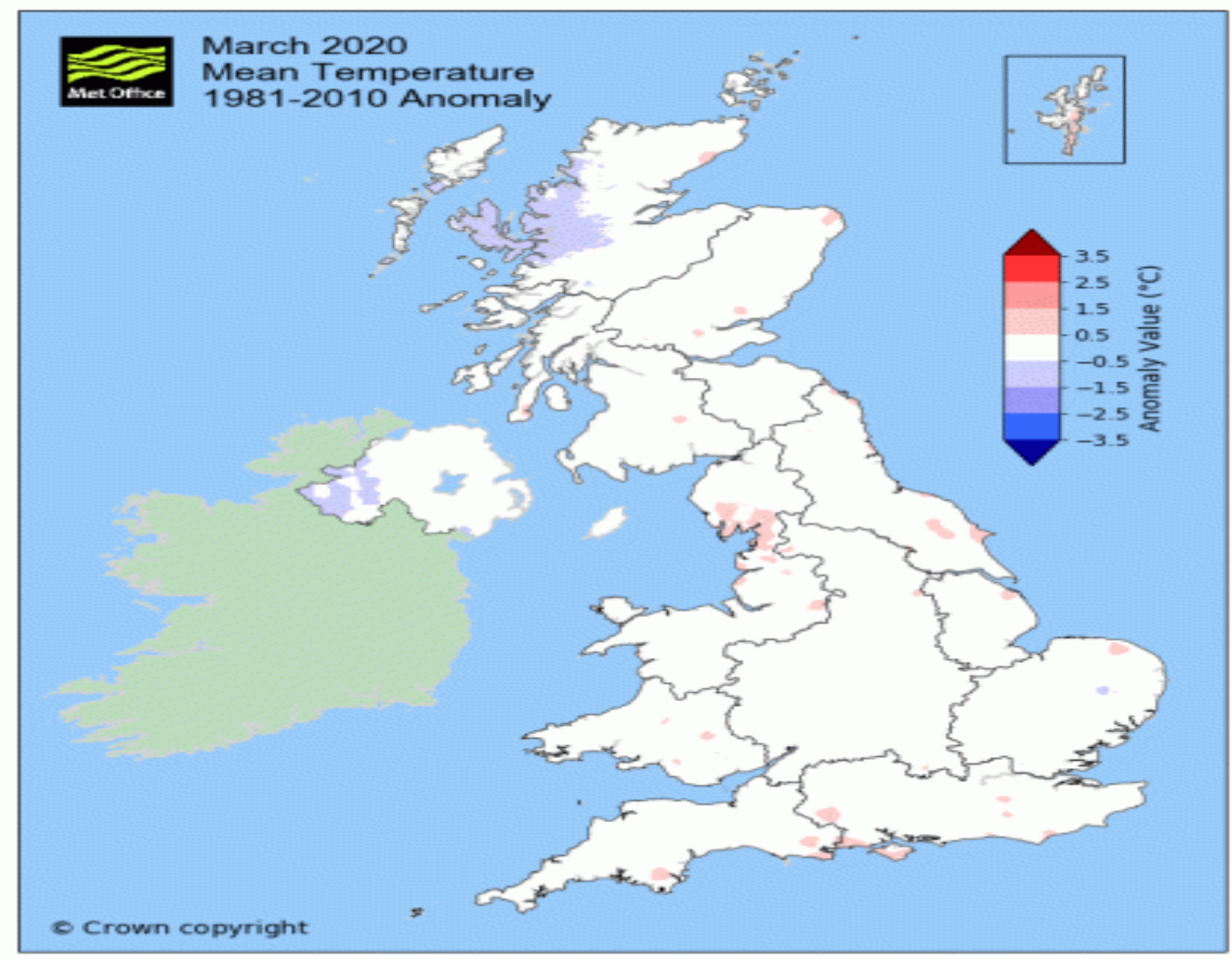
Procession of spring begins with a moderate March

Description

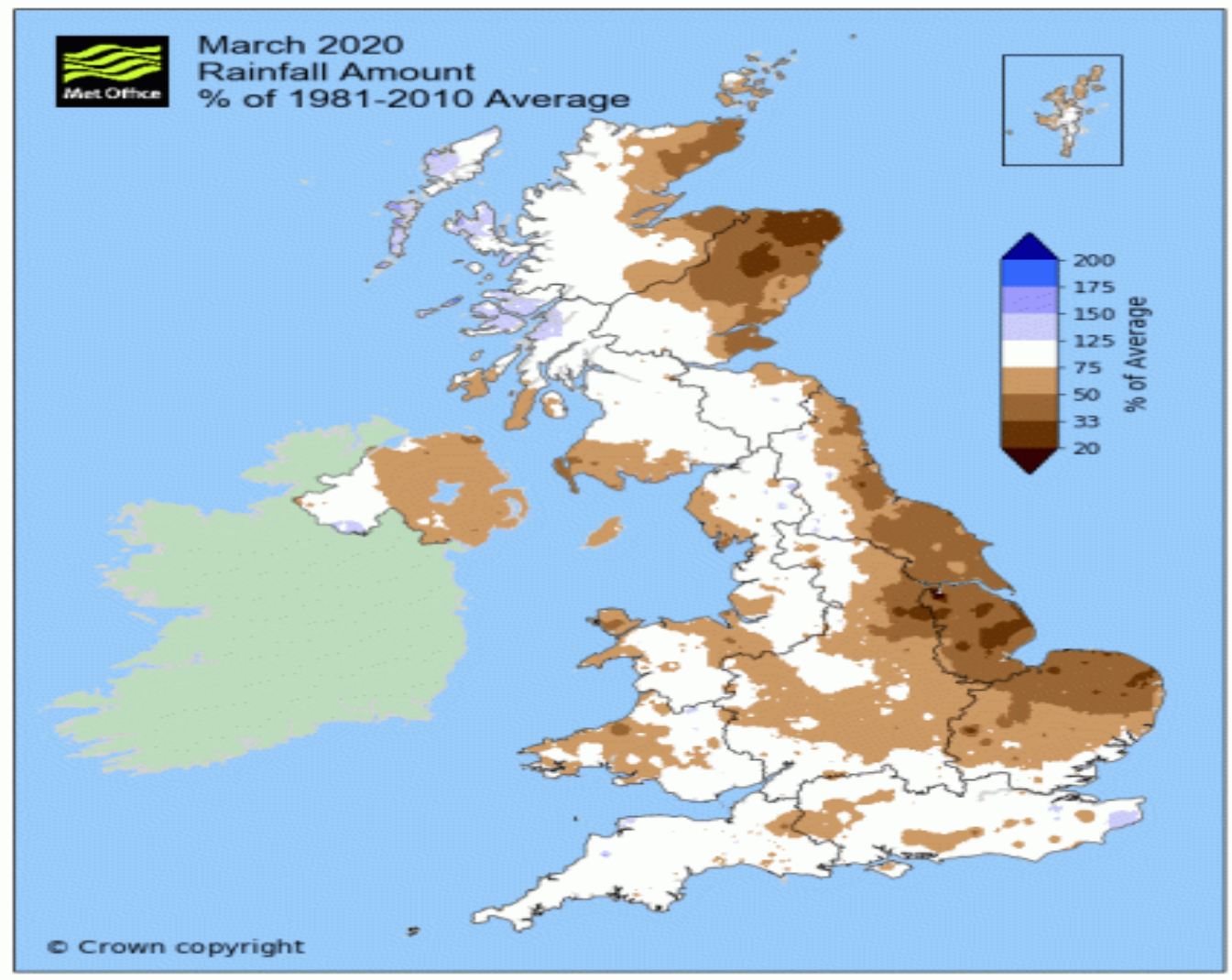
Meteorologically March has been a relatively average month, certainly when compared to the record-breaking wet February the UK has just seen. The first month of meteorological Spring has delivered everything we expect in March from warm days to strong winds and snow.

Temperatures have been close to average for the month, with the UK as a whole just 0.1°C above the long-term average. England has been slightly warmer (0.2°C) and Northern Ireland slightly cooler (-0.3°C) than average.

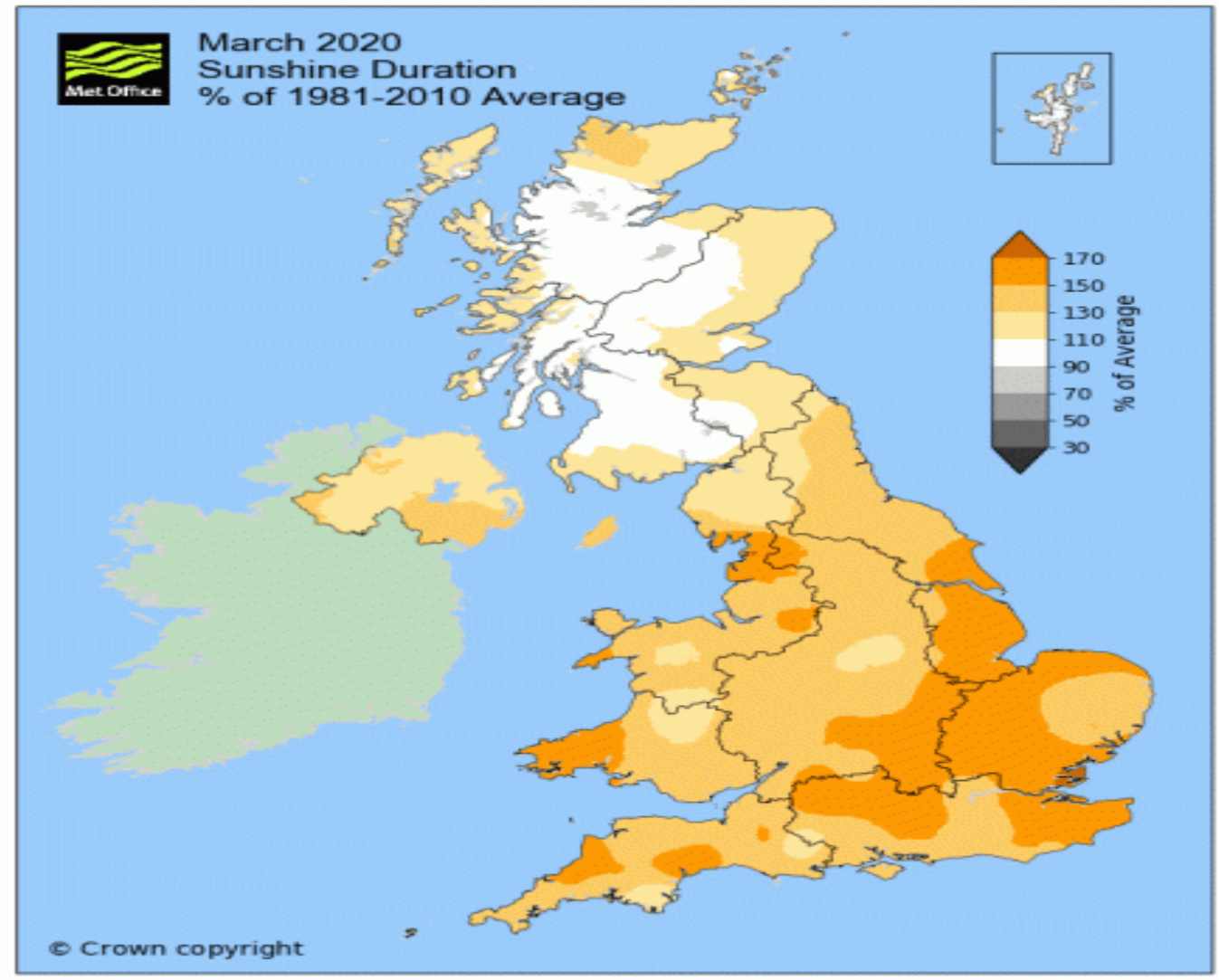


In contrast to February, March was comparatively dry, with the UK receiving 82% (78mm) of its average rainfall. Most of the month's rainfall fell during the first 18 days of March, continuing the unsettled spell from the past winter. The east of the country has been particularly dry, for example Aberdeenshire and Lincolnshire have had in the region of just 1/3 of their normal rainfall. Whilst some places in the west of the country have been much closer to or just above average. The Western Isles

were the wettest compared to average, with 131% (189mm) of the normal rainfall total for the month.



March has been a notably sunny month, with all regions seeing more than the average total of sunshine hours, especially in England and Wales. The sunniest county was Kent with 185.4 hours of sunshine. Some counties such as Essex, Kent and Rutland have recorded totals in the top 10 in their records.



Although rather average on the usual statistical fields, March has still seen a new record set. Tim Legg from the National Climate Information Centre, said: “On Sunday 29 March, a new March record was set for the highest mean sea level pressure recorded in the UK, with 1051.2mb at South Uist in Scotland. The location in the Western Isles was one of the closest monitoring stations to the centre of the large area of high pressure out in the Atlantic which has been responsible for bringing the largely settled and sunny conditions to much of the UK over the final days of the month.”

With these fairly settled conditions, there have been a number of frosts, something the UK didn’t see a huge amount of over the winter months. Although it’s not unusual to get frosts in March, it is interesting that in Wales and northern England there have been more frosts in March than there were in any one of the winter months, showing just how mild it was through December, January and February.

Provisional March 2020	Mean temp (°C)		Sunshine (hours)		Rainfall (mm)	
	Actual	Diff from avg (°C)	Actual	% of avg	Actual	% of avg
UK	5.6	0.1	136.3	134	78.0	82
England	6.4	0.2	157.1	146	49.0	77

Wales	5.9	0.1	142.3	140	94.3	81
Scotland	4.1	-0.0	101.8	110	123.3	88
N Ireland	5.6	-0.3	126.2	128	68.6	72

Date Created
April 2020

Exeter builds on its world-class status as centre for climate research

Description

In Devon the concentration of environmental scientists is four times higher than the national UK average and Exeter is widely recognised as a global centre for climate science research with teams of scientists at both the Met Office and the University of Exeter.

Exeter is increasing its reputation for a world-class centre for climate research. Pic: Shutterstock.

And now the bonds between two key organisations in this world-class hub have been strengthened with the recruitment of nine Met Office scientists, who will work one day per week at the University of Exeter' Global Systems Institute (GSI).

The appointments will strengthen ties with the Met Office and boost both knowledge and cooperation in the GSI and the wider University.

The scientists bring expertise on a variety of subjects, ranging from government policy and climate

computer models, to the impacts of climate change on human migration.

Professor Stephen Belcher is the Met Office's chief scientist. Commenting on the closer collaboration between the two organisations, he said: "Global climate change is not going to be solved by one individual or one organisation. By building stronger bonds with a range of organisations across a range of disciplines we're able to share the Met Office's expertise, allowing scientists to collaborate and learn from the experience of others."

Professor Tim Lenton is the director of the Global Systems Institute. He said: "The Global Systems Institute is uniting a trans-disciplinary group of researchers, educators and partners.

"Joint appointments such as these, with the Met Office, help us build the kind of collaborations we need to come up with networked solutions to complex global problems."

Spanning a huge breadth of scientific disciplines, the nine scientists are enthusiastic about the opportunities. Here are some of their views.

Dr Catherine Bradshaw said: "For food security, and especially monitoring crop pests and diseases, it's exciting to join up the cutting-edge research of the University with the possibility of turning that science into new operational systems at the Met Office."

Dr Rob Chadwick added: "I'm working closely with the climate dynamics group at the University, supervising a PhD student examining the response of monsoon rainfall to climate change and a postdoctoral researcher working on the impacts of El Niño in a changing climate."

Dr James Manners is a senior scientist at the Met Office. He said: "I see my role acting as a link between the climate, space weather, and exoplanet modelling communities to push boundaries. My initial focus is investigating the effects of solar variability on the upper atmosphere and how this might affect the climate at the surface."

Dr Niall Robinson added: "I'm excited about joining the Global Systems Institute so I can work on research which spans disciplines – I think this is where the most interesting research is happening now.

"Working at the University will allow me to carry out some really ambitious research which can then feed into my work at the Met Office, where I can work on some real-world applications."

Dr Helen Webster, said: "My role involves conducting research into the transport and dispersion of potentially hazardous substances in the atmosphere. It involves developing atmospheric dispersion models and applying them to a wide-range of natural and man-made hazards, including volcanic eruptions, air quality and pollution, animal, human and plant diseases, chemical, biological and radiological releases, fires and Saharan dust."

Dr Andy Wiltshire, Head, Earth System and Mitigation Science (ESMS) and Terrestrial Carbon Cycle Manager, concluded: "I look forward to jointly developing the next generation vegetation and carbon cycle models that are essential to understanding the impacts of climate change and to investigate how the land can be managed to offset ongoing fossil fuel emissions."

The new staff are: Dr Catherine Bradshaw, Dr Rob Chadwick, Dr Kirsty Lewis, Dr James Manners, Dr Doug McNeall, Dr Niall Robinson, Dr Helen Webster, Dr Karina Williams and Dr Andy Wiltshire.

Date Created
April 2020

Dry and sunny April so far

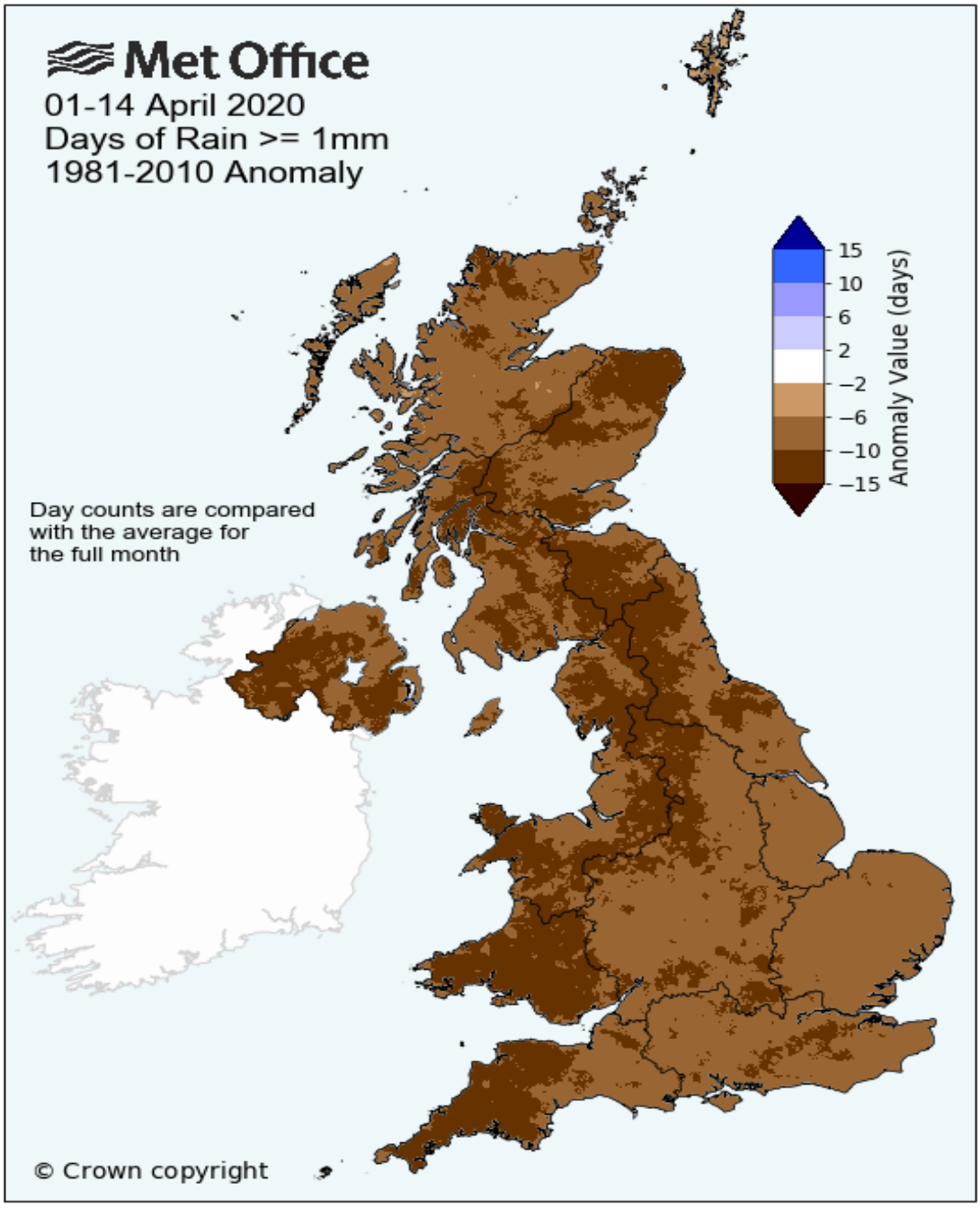
Description

It has been a dry and sunny picture for the first half of April.

Provisional mid-month statistics (1-15th April) show areas such as the City of London, Kent, Surrey, West Sussex and the Isle of Wight having recorded around half a millimetre of rainfall so far this month, just 1% of the monthly average. In fact, for many areas of the UK there has been no appreciable rainfall since 19th March.

Provisional	**Rainfall**		**Sunshine**	
1-15 April	**Actual mm**	**% of monthly average**	**Actual hours**	**% of monthly average**
UK	9.2	13.0	98.5	66.0
England	2.9	5.0	117.0	75.0
Wales	8.3	9.0	111.2	72.0
Scotland	19.8	22.0	66.2	49.0
Northern Ireland	8.9	12.0	88.9	60.0

Northern Scotland has been the wettest area of the UK, but even there they have only seen 29% of their monthly average.



Rainfall 1-15th April 2020 compared to the monthly average

The provisional mid-month figures (1-15th April) show the first half of April has also been sunny for England and Wales with around three quarters of the normal monthly sunshine. Areas such as the West Midlands, Northamptonshire, Somerset, Berkshire and Rutland having seen more than 80%.

Daytime temperatures for the country as a whole are so far 2.5°C above the monthly average (1-15th April) with mean temperatures 1.6°C above the average for April.

Provisional	**Max temp**		**Mean temp**	
1-15th April	**Actual °C**	**°C above average**	**Actual °C**	**°C above average**

UK	14.0	2.5	9.0	1.6
England	15.8	3.4	10.2	2.1
Wales	15.1	3.5	9.7	2.1
Scotland	10.8	1.0	7.0	0.9
Northern Ireland	13.3	1.7	8.9	1.3

However, as we look ahead at the second half of April the prolonged spell of dry weather may be about to end with rain on the way for some.

Whatever the weather we are all being urged to remember the Government Coronavirus guidelines to stay at home. Do not go out to meet others, even friends or family, as it is possible to spread the virus even if you don't have symptoms. Only go outside for food, health reasons or work (but only if you cannot work from home), always stay 2 metres (6ft) away from other people and wash your hands as soon as you return home.

You can get the most accurate and up to date forecast for your area using our forecast pages and by following us on Twitter and Facebook, as well as using our mobile app which is available for iPhone from the App store and for Android from the Google Play store. You can check the latest weather warnings on our severe weather warnings pages.

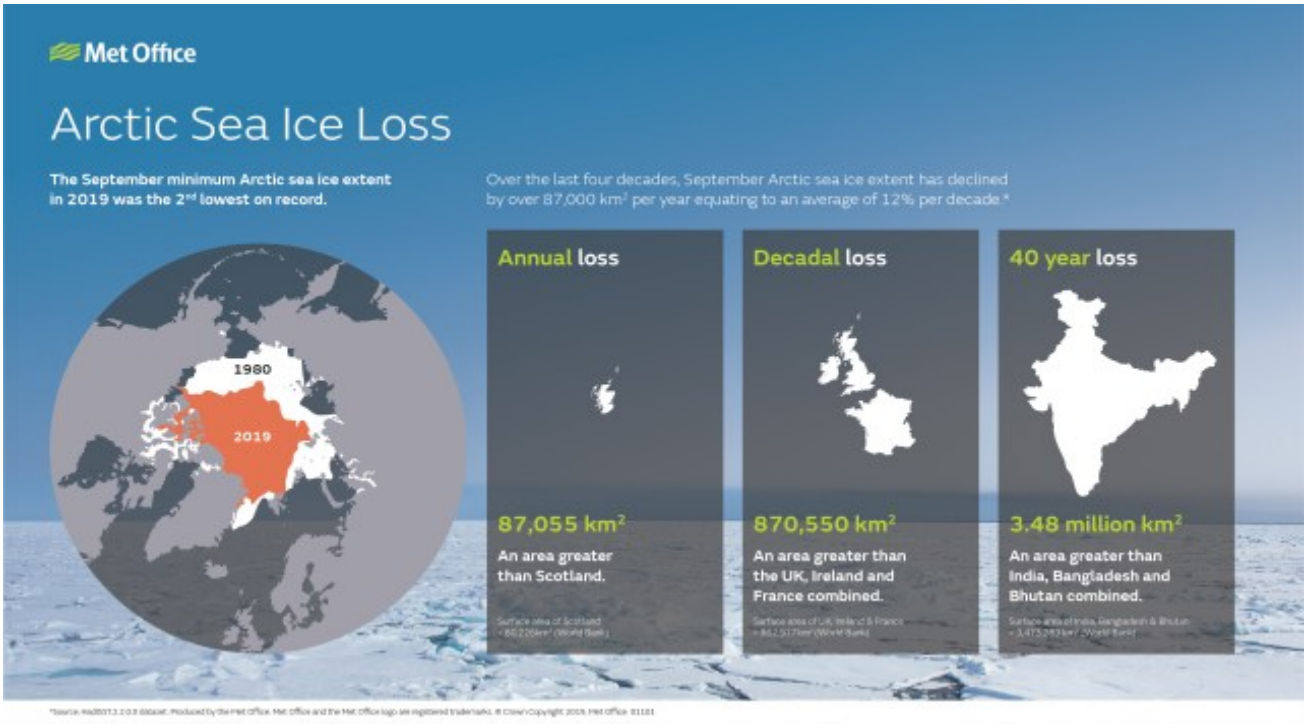
Date Created
April 2020

New study highlights increasing vulnerability of Arctic sea ice

Description

The Arctic is one of the regions of the world warming most rapidly because of climate change; the rapid loss of Arctic sea ice cover has been one of the most visible indicators of climate change in recent years.

Satellite observations, which started in 1979, show Arctic sea ice extent has declined in all seasons – with the largest losses in summer. Arctic sea ice extent at the September summer minimum has declined at an average rate of almost 12% per decade since satellite records began in 1979. This equates to an average loss each year of over 87,000 square kilometres – an area greater than Scotland, or more than four times the size of Wales.


Met Office
Arctic Sea Ice Loss
The September minimum Arctic sea ice extent in 2019 was the 2nd lowest on record.
Over the last four decades, September Arctic sea ice extent has declined by over 87,000 km² per year equating to an average of 12% per decade.*
1980
2019
Annual loss
87,055 km²
An area greater than Scotland.
Decadal loss
870,550 km²
An area greater than the UK, Ireland and France combined.
40 year loss
3.48 million km²
An area greater than India, Bangladesh and Bhutan combined.

Satellite observations, which began in 1979, show #Arctic sea ice extent has declined in all seasons. At the September summer minimum it had declined at an average rate of 12% per decade. This equates to an average loss each year of over 87,000 km2 – an area larger than Scotland.

Now a new study involving an international team of scientists, led by the University of Hamburg and including the Met Office Hadley Centre, shows the potential for significant further stress on summer sea-ice in the Arctic.

The study, published in the journal Geophysical Research Letters, uses results from the latest generation of climate models (known collectively as CMIP6). When these models are compared, the

authors have shown that the majority of models project ice-free summers before 2050, almost completely irrespective of the future scenario of greenhouse gas emissions. For the purpose of climate studies the Arctic Ocean is said to be “ice-free” when the sea ice extent falls below one million square kilometres. As a comparison, the 1981-2010 long-term September average from our HadISST.2.2.0.0 dataset is 7.27 million square kilometres.

Dr Ed Blockley is the lead for the Met Office Polar Climate programme and an author on the paper. He said: “The Arctic has already proved vulnerable to climate change and it is already one of the regions on Earth showing the most rapid warming.

“The findings in our latest study provide further concern about the increasing vulnerability of the Arctic to climate change. Alarmingly the models used in the study repeatedly show the potential for ice-free summers in the Arctic Ocean to occur before 2050, almost irrespective of the measures taken to mitigate the effects of climate change. However, the study shows that the scenarios displaying the greatest cuts in greenhouse gas emissions have the least likelihood of the creation of ice-free summers, but the signal is there in all possible futures – this was unexpected and is extremely worrying.”

Many species, like this bearded seal, depend on summer sea ice in the Arctic. Projections show that in some years Arctic sea ice could disappear in summer, even under lower emissions scenarios. Higher emission scenarios are likely to lead to even more years with summer sea ice loss.

Currently, the North Pole is covered by sea ice year-round. Each summer, the area of the sea ice cover decreases, in winter it grows again. In response to ongoing global warming, the overall area of the Arctic Ocean that is covered by sea ice has rapidly been reduced over the past few decades. This substantially affects the Arctic ecosystem and climate: The sea-ice cover is a hunting ground and habitat for polar bears and seals, and keeps the Arctic cool by reflecting sunlight.

Met Office Chief Scientist Stephen Belcher , said: “The science is progressively informing us that climate change is likely to have increasingly significant impacts on our world. How often the Arctic Ocean will be seasonally ice-free in future critically depends on future CO_2 emissions. If emissions are reduced rapidly, ice-free years are expected to occur less frequently. With higher emissions, the Arctic Ocean will become ice free in most years.”

The study involved 21 research institutes from around the world, and was coordinated by Dr Dirk Notz from the University of Hamburg, Germany, through the international SIMIP (Sea Ice Model Inter-comparison Project) community.

The research team has analysed recent results from 40 different climate models.

Date Created

April 2020

Met Office Academic Partnership welcomes new Universities

Description

The Met Office is joining forces with two more leading UK universities to tackle the key research challenges related to weather prediction and a changing climate.

The Met Office Academic Partnership (MOAP) is a cluster of research excellence that brings together the Met Office and leading UK Universities in weather and climate science, to advance the science and skill of weather and climate prediction. The Met Office and Universities of Exeter, Leeds, Oxford and Reading are delighted to welcome the University of Bristol and University College London to MOAP, and look forward to working together as an expanded, more diverse and more powerful partnership.

Met Office
The MOAP supports the **next generation of science leaders** to ensure the UK can continue to deliver world-leading science in the future.

Professor Stephen Belcher, Met Office Chief Scientist, said “I am delighted that UCL and University of Bristol are to join the Met Office Academic Partnership. They bring a wealth of talent and expertise to this thriving partnership that will ensure the Met Office delivers its research and innovation strategy and improves weather and climate science and services.”

More than 1000 scientific papers have been co-authored by MOAP with key scientific developments delivered through collaborations between MOAP scientists. However, over the last decade since MOAP was established, the nature of the science we undertake has changed. The Met Office is embracing machine learning and data sciences in its research and seeking to understand how weather and climate–related hazards impact our day-to-day lives and decisions. This increasing complexity has driven the expansion of MOAP.

People are key to the success of the MOAP and the partnership invests in the role of a Joint Chair at each partner University to provide scientific leadership. Dr Dann Mitchell, Met Office Joint Chair at the University of Bristol is an expert in climate dynamics and impacts. Dr Mitchell said: “When I applied for my University of Bristol faculty position I wrote in my cover letter that I’d be keen to push for an academic partnership with the Met Office, and 3 years later I’m delighted that I was able to be part of the team that did that. Some of my best research has been done through working closely with Met Office scientists over the years, and I’m looking forward to linking up other academics at Bristol with this fantastic research centre.”

Professor Serge Guillas is an environmental statistician and the new Met Office Joint Chair at UCL. Prof essor Guillas said: “I feel very privileged that an exceptional team of data scientists, machine learners, mathematicians and environmental scientists at UCL are enthusiastically collaborating with the Met Office. The fields of data science and machine learning have recently matured to a point where this partnership will concretely transform the way we understand and model weather and climate and their impacts, for instance by fusing rich sets of observations with simulations or providing new ways of quantifying uncertainties in climate predictions.”

You can find out more about MOAP on the Met Office website and for more information on our key collaborative projects, check out the following links: IMPALA, GungHo, and Paracon .

Date Created
April 2020